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09/492,561	01/27/2000	Regis J. Crinon	Tal:7146.042	1024

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Timothy A Long
601 SW Second Avenue Suite 1600
Portland, OR 97204

EXAMINER

KOENIG, ANDREW Y

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/492,561

Applicant(s)

CRINON, REGIS J.

Examiner

Andrew Y Koenig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: all reference numbers (100-141) in figures 5-7. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-19, 21-28, 31, 32, 34, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,559,999 to Maturi et al.

Regarding claim 1, Maturi teaches instigating an event such as synchronizing the audio with the video (Abstract). Maturi teaches a system time clock (STC) located and provided in the decoder, a system clock reference (SCR) as used in MPEG-I or Program Clock Reference (PCR) as used in MPEG-II which is the clock reference given by the encoder (col. 2, ll. 14-22). Along with the time clocks, Maturi teaches a Presentation Time Stamp (PTS) which indicates the proper presentation of data (col. 1,

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II. 62-65). Maturi teaches an audio/video decoder as shown in figure 1, which generates a reconstructed application includes time to initiate the event (col. 7, II. 28-36). The time to initiate the event (claimed application time moment) is a function of STC (claimed current moment of a system time), a PTS (claimed sampled application time moment), and decoding time stamp (DTS) which is associated with a sampled moment of a system time associated with sample application time moment. Further, Maturi teaches performing the action once the time is less than one frame time interval different (col. 7, II. 37-40).

Regarding claim 2, Maturi teaches instigating an event such as synchronizing the audio with the video (Abstract). Maturi teaches a system time clock (STC) located and provided in the decoder, a system clock reference (SCR) as used in MPEG-I or Program Clock Reference (PCR) as used in MPEG-II which is the clock reference given by the encoder (col. 2, II. 14-22). Along with the time clocks, Maturi teaches a Presentation Time Stamp (PTS) which indicates the proper presentation of data (col. 1, II. 62-65). Maturi teaches an audio/video decoder as shown in figure 1, which generates a reconstructed application includes time to initiate the event (col. 7, II. 28-36). The time to initiate the event (claimed application time moment) is a function of STC (claimed current moment of a system time), a PTS (claimed sampled application time moment), and decoding time stamp (DTS) which is associated with a sampled moment of a system time associated with sample application time moment. Maturi teaches associating the event and instant with a correlating application time, where the instant is less than one frame time interval different (col. 7, II. 37-40) and application time is

correlated with a presentation moment of system time as discussed above. Maturi teaches performing the action once the time is less than one frame time interval different (col. 7, ll. 37-40).

Regarding claim 3, Maturi teaches a Decoding Time Stamp (DTS) which incorporating a sample moment of the application time in a data unit to be presented at the presentation moment approximately corresponding to sample moment of the system time by taking the difference of the fixed decoding time from the PTS (col. 7, ll. 34-36).

Regarding claim 4, Maturi teaches incorporating the instant at approximately said correlating time, where the data unit is to be presented at the presentation moment (col. 7, ll. 34-40).

Regarding claim 5, Maturi teaches presenting the event at the presentation moment at the instant of the presentation moment, when the instant is less than one frame interval different (col. 7, ll. 40-37).

Regarding claim 6, Maturi teaches synchronizing the audio (claimed event) to the video elements (col. 3, ll. 25-30). Maturi teaches associating a Presentation Time Stamp (PTS) with a System Clock Reference (SCR) or a Program Clock Reference (PCR) (col. 2, ll. 13-21), which equates to associating a sample application time moment with a sample system time moment. Further, Maturi teaches using the PTS and SCR/PCR to synchronize the reconstructed local clock, which is the System Time Clock (STC), which as taught by Maturi manages both the audio and video and consequently reads on both the claimed application and system clock (col. 2, ll. 13-21, col. 3, ll. 21-24). Maturi teaches associating the audio (claimed event) and video

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(claimed instant of said program element) with a PTS (col. 7, ll. 22-27). Maturi teaches relating the application time and presentation moment by creating a Decoder Time Stamp (DTS), which is the PTS minus a fixed decoding time (col. 7, ll. 34-36). Maturi teaches instigating the audio at a time moment generated by the STC corresponding to the DTS (col. 7, ll. 34-45).

Regarding claim 7, the system of Maturi uses the same STC for the application time clock and system time clock, accordingly, the sample application time moment is in the same data unit and is presented at the sample system time.

Regarding claim 8, Maturi teaches selecting a moment from an application timeline generated by an application clock, where the audio PTS is sent downstream in the program stream (col. 5, ll. 3-10). As discussed in claim 6, Maturi teaches accounting for the time it takes to shift decode the audio and provides a DTS and consequently incorporates this difference in order to timestamp the PTS for the proper synchronization (col. 7, ll. 34-40).

Regarding claim 9, Maturi teaches comparing the STC (claimed current time moment) to the PCR/SCR time moment in order to synchronize the overall system clocks at the encoder and decoder (col. 7, ll. 22-27). As discussed in claim 7, clearly the application clock and STC are set equal to each other at all times, which reads on when said current system time moment corresponds to said same system time moment.

Regarding claim 10, Maturi teaches creating a DTS, which is the PTS minus a fixed decoding time, which permits the audio to be synchronized to the video to within a frame (col. 7, ll. 34-40).

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Regarding claim 11, Maturi teaches presenting the data within a frame of the video (col. 7, ll. 34-40), which reads on said instant at said presentation moment of said system time.

Regarding claim 12, the limitations of claim 12 have been addressed in the discussion of claim 6, and the claim 12 adds the limitations of a second data unit, which is also taught by Maturi. Maturi teaches that PTS and access units are carried in different layers of the hierarchy and are not necessary sent together. Consequently, Maturi teaches transmitting access units to the receiver in a second data unit having a second presentation moment of system time associated with said correlating moment of the application time (col. 1-2, ll. 66-4, col. 2, ll. 22-35).

Regarding claim 13, the limitations of claim 13 have been addressed in the discussion of claims 6, 7, and 12.

Regarding claim 14, Maturi teaches comparing the STC (claimed current time moment) to the PCR/SCR time moment in order to synchronize the overall system clocks at the encoder and decoder (col. 7, ll. 22-27). As discussed in claim 7, clearly the application clock and STC are set equal to each other at all times, which reads on when said current system time moment corresponds to said same system time moment.

Regarding claim 15, Maturi teaches encoding the PTS, for indicating the presentation time, where the PTS is the time stamp associated with an access unit, which is all sent to the receiver (col. 1-2, ll. 66-4).

Regarding claim 16, in the system of Maturi, video and audio data is constantly streaming downstream to the receiver; accordingly Maturi teaches receiving a third data

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unit and transmitting the third data unit to the receiver in a similar fashion as described for the second data unit.

Regarding claim 17, as discussed above with the relationship between access units and PTS, a third data unit can have a temporal relation to the first data unit presentation unit.

Regarding claim 18, Maturi teaches generating a system and application time (see discussion of claim 9) and selecting a PTS (claimed sample moment of the application time) at the encoder (col. 1, ll. 62-65) and sending the data downstream to the user in a first data unit (col. 1-2, ll. 66-4). Further, Maturi teaches generating a DTS, synchronized to the system time by the sample moment and first data unit presentation moment (col. 7, ll. 34-37), further the examiner notes that by determining the DTS, the DTS is associated with the audio even and said instant of said video with a correlating moment of said application time, such as $DTS = PTS - \text{fixed decoding time}$; Maturi teaches presenting the system time in order to play the audio event synchronized with the video (col. 7, ll. 22-40).

Regarding claim 19, the limitations of claim 19 have been addressed in the discussion of claim 14; claim 19 further adds the limitation of incrementing the reconstructed application time. Maturi teaches a STC which is incremented at 90 kHz (col. 7, ll. 22-27).

Regarding claim 21, Maturi teaches a DTS, which is adjusted for a period required to create, said first data unit (col. 7, ll. 34-36).

Regarding claim 22, in the system of Maturi, video and audio data is constantly streaming downstream to the receiver; accordingly Maturi teaches receiving a second data unit and timestamping the second data unit to the receiver in a similar fashion as described for the first data unit.

Regarding claim 23, in the system of Maturi, video and audio data is constantly streaming downstream to the receiver; accordingly Maturi correlating a second data unit and transmitting the second data unit to the receiver in a similar fashion as described for the first data unit.

Regarding claim 24, clearly in a streaming system, the data unit is transmitted to the receiver prior to said reconstructed application time corresponding to said correlating moment in order to properly process the audio (col. 7, ll. 37-53).

Regarding claims 25 and 26, Maturi teaches continuously streaming audio and video, wherein the system has a temporal relationship to the first data unit presentation moment in order to re-create audio and video in the proper sequence.

Regarding claim 27, the limitations of claim 27 have been addressed in the discussion of claim 18, in addition fig 3 has a pre-parser 22 and a post-parser 24.

Regarding claim 28, Maturi teaches a clock to reconstruct the event as shown in fig. 10, 11, see also the discussion of claims 18 and 27.

Regarding claim 31, Maturi teaches the SCR and PCD (col. 3, ll. 31-35) as a system time. Maturi teaches the clock as a counter (col. 7, ll. 22-27). Maturi teaches the STC derived from SCR or PCR (col. 3, ll. 31-43), which is divided to reduce the resolution. Maturi teaches a comparator (fig. 10, label 42, fig. 11, label 42), and the pre-

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parser (22) and post-parser (24) clearly have registers in order to process the audio decoding in less than one frame time interval different from the counter (col. 7, ll. 37-40). As described previously in the rejection, there exist PTS and presentation units (PU) which are not necessarily sent together, which equate to the first, second, and third data unit presentation moments (col. 1-2, ll. 66-4), which are clearly depacketized in order to retrieve the data. The system of Maturi provides the time recovery unit and the presentation units (fig. 3).

Regarding claim 32, Maturi teaches synchronizing the audio with the video, which reads on an event.

Regarding claims 34 and 35, the limitations of claims 34 and 35 have been addressed in the discussion of claims 27, 28, and 31.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20, 29, 30, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,559,999 to Maturi et al.

Regarding claims 20 and 29, Maturi teaches the SCR and PCD (col. 3, ll. 31-35) as a system time signal having a system time unit frequency. Maturi is silent on dividing

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the signal to produce a trigger signal having an application time unit frequency, while teaching the application time frequency, STC (col. 21-24). Official Notice is taken that dividing a clock is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maturi to divide the clock in order to derive another lower resolution clock in order to synchronize playback thereby creating a more robust system. Maturi teaches the clock as a counter (col. 7, ll. 22-27).

Regarding claim 30, Maturi teaches the STC derived from SCR or PCR (col. 3, ll. 31-43), which is divided to reduce the resolution as discussed in claim 29. Maturi teaches a comparator (fig. 10, label 42, fig. 11, label 42), and the pre-parser (22) and post-parser (24) clearly have registers in order to process the audio decoding in less than one frame time interval different from the counter (col. 7, ll. 37-40).

Regarding claim 33, Maturi teaches receiving a payload of the data unit comprising application time sample, which is clearly generated via the encoder and is sent downstream (col. 1, ll. 45-54). Maturi is silent on a data server. Official Notice is taken that a data server constructing payloads is well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Maturi by implementing a data server in order to create the data that is sent downstream thereby providing the proper PTS information to properly synchronize events with the video. Further, Maturi teaches a multiplexer adding a heading comprising said second data unit presentation time (col. 1-2, ll. 66-4, col. 2, ll. 55-59, col. 4, ll. 40-47).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Y Koenig whose telephone number is (703) 306-0399. The examiner can normally be reached on M-Th (7:30 - 6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Faile can be reached on (703) 305-4380. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

ayk


CHRIS GRANT
PRIMARY EXAMINER